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LITHOGRAPHIC ABSTRACTS, SEPTEMBER 1960

PHOTOGRAPHY, TONE & COLOR CORRECTION

*COLOR CORRECTION SYSTEM. U. S. Patent 2,939,908 - Application July 20, 1956. Louis Shapiro - Assigned to Radio Corporation of America. Official Gazette 755, No. 1, June 7, 1960, pp. 218-219. Apparatus for deriving black printer information from a subject having color characteristics by means of signals representative of color components of said subject, said apparatus comprising means for producing first and second signals respectively representative of the brightness and of the color saturation of said subject from said color component signals, and means including a non-linear mixer circuit connected to receive the outputs of said first and second signal producing means and arranged to produce signals representative of the black of said subject from said brightness and color-saturation signals with the magnitude of said black signals being controlled primarily in accordance with the one of said brightness and color-saturation signals closer to one of the extremes over at least certain portions of the ranges of said first and second signals.

*THE COLOUR DISTANCES IN THE SYSTEM OF THE DIN-COLOUR CHART. H. Weise. Farbe, Vol. 8, No. 1, August, 1959, pp. 19-28 (in German); Printing Abstracts, Vol. 15, No. 1, January, 1960, p. 58. The DIN Colour Chart is based on a colour system aiming at colour series spaced as uniformly as possible. Therefore small colour distances may be evaluated by means of a simple difference formula in terms of the coordinates of the system. The colour distance measurements following Nickerson-Stultz and according to the MacAdam ellipses were used for comparison. It was found that there is no direct relation between these different colour distance measurements, but the differences are evaluated generally in the same sense. To decide whether one or another formula should be preferred further investigations involving visual judgements are required.

COLOR CORRECTION SCANNING NOW IN COMMERCIAL PRODUCTION IN EUROPEAN GRAVURE PLANTS. Anon. Gravure 6, No. 3, March 1960, pp. 28, 31, 32 (3 pages). A story on the British Scanatron as used in England, France, Germany, Holland and other European countries. Thirteen interesting features of the equipment are listed and its operation is explained by means of a diagram. A number of American firms are said to have the equipment under consideration. 5 illustrations and a tipped in color example.

CURRENT EXPERIENCE IN OPERATING THE SCANATRON SCANNER. Gordon S. Allen. The British Printer 73, No. 6, June 1960, pp. 103, 104, 105 (3 pages). A report based on some months of actual usage in printing production during which some entirely new experience was gained. Some of this related to "human engineering" or the operator factor. Explanation is given as to how a system is used to simplify the operator's task and how operator suggestions have been incorporated in the machine. A skilled retoucher or color camera operator can be trained to operate the Scanatron in 2 weeks. Some experiences with the equipment in actual use are cited and suggestions coming from these experiences on gravure, offset, black printer and other problems given. Three illustrations in monochrome and an insert page in color run in 4 color gravure without hand work.

NOMOGRAMM FOR THE PRACTICAL EVALUATION OF THE TIME-GAMMA CURVE IN PROCESS PHOTOGRAPHY. Joel Von Laderach. Fachhefte Bulletin Technique 1/1960, March 1960, pp. 9-16 (8 pages) (in German) - 4 line diagram illustrations.

STANDARD CONDITIONS FOR COLOUR VIEWING. F. W. Mackenzie. Process 67, No. 794, March 1960, pp. 82, 83 (2 pages). The need for standardized viewing light for viewing colored printing arises from the fact that one person may view by daylight, one by artificial light, and they may see different results. Sun Engraving Co. has provided customers with standardized viewing booths, which are checked periodically against their own so all concerned will see color the same. A line drawing shows the booth and illumination used and three halftones show it in use.

AN ELECTRONIC TONE MASKING PRINTER FOR THE DUPLICATION OF 35mm COLOUR TRANSPARENCIES. D. M. Neale and D. S. Reid. The Journal of Photographic Science, Vol. 8, No. 3, May/June 1960, pp. 85 - 101 (17 pages). The characteristics of Ilford Colour are discussed so far as they affect the problem of duplication. The need for a negative contrast mask is established and its ideal characteristic derived. An electronic method is described capable of producing instantaneously a mask of the requisite nature. This is done by modulating the television-type raster on a cathode ray tube acting as the light source for a contact printer. Requirements of the c.r.t. phospher, optics, photomultiplier, amplifier and scanning, timing and protection circuits are dealt with. Five Appendices provide a detailed mathematical analysis of the inter-relation of the characteristics of the original transparency, negative contrast mask, static and dynamic gain of the amplifier, bandwidth of the mask image and signal/noise ratio. 8 references. 22 illustrations.

A GLASS SCREEN HALFTONE SENSITOMETER. Raymond Alfaya. Photographic Science and Engineering 4, No. 2, March/April 1960, pp. 74-77 (4 pages). Exposure of halftone dot patterns on film test samples is required in the evaluation of "lith"-type films and processing systems used in the graphic arts industry. Though a process camera equipped with a cross-line glass screen can be used for making halftone exposures which are representative of practical application, this type of equipment is cumbersome and inconvenient for experimental and test use. Discussed here is a simple, compact optical system which will effectively simulate any set of optical conditions obtainable in a process camera. A prototype halftone sensitometer using this system is described. 3 line illustrations, 8 references.

A METHOD OF MEASURING NONLINEAR DISTORTION CAUSED BY PHOTOGRAPHIC LENSES. Kojiro Kinoshita, Hidehisa Sato, and Sizuo Tatuoka. Photographic Science and Engineering 4, No. 2, March/April 1960, pp. 86 - 89 (4 pages). Photographic lenses are considered as spatial frequency filters whose performance may be described in terms of amplitude and phase response. Aberrations are then treated as frequency distortions. In order to study the uniformity of field of lenses in these terms, a square wave test chart of fixed frequency and sufficient extent to fill the field was prepared, and test photographs were made at such reduction that the spatial frequency in the image was about 16 lines/mm. The amplitude response for this frequency, measured as a function of field angle, was determined from microdensitometer traces. Phase characteristics of the lenses were determined by comparing the negative image with a suitable 16-lines/mm test grating. The amount of optical distortion can be estimated from phase data thus obtained.

SCIENTIFIC APPROACH TO THE MYSTERIES OF COLOR. Warren L. Rhodes. Printing Production 90, No. 4, January 1960, pp. 51, 52, 54 (3 pages). See also - Anon, COLOR - Modern Lithography 28, No. 2, February 1960, pp. 32-3, 119-121. A report on a 3 day color seminar held at the Rochester Institute of Technology. Dr. Sidney Newhall spoke of differences between visual and spectrophotometric evaluation of colors or metamerisms. Warren Reese spoke on light sources for viewing colors and described requirements to meet various situations. F. L. Wurzburg spoke on the measurement of color and compared spectrophotometer, clorimeters, densitometers and the eye. Warren Rhodes spoke on color specifications and tolerances, describing the capabilities and limitations of spectrophotometers, permanent standards, color samples and visual matching.

COLOR PREDICTION AND CONTROL. M. C. Byrum. National Lithographer 67, No. 5, May 1960, pp. 34-35 (2 pages). It is pointed out that color memory can be deceptive. Efforts to develop a control book are described. New fine grain aluminum plates, heatset inks and improved water control have helped; and the book has been published.

*MULTIMASK FILM. I. Harris. Litho-Printer, December 1959, pages 6-7; Ansco Abstracts, Vol. 20, No. 5, May 1960, page 246. The Gevaert film available in sizes up to 15.75 x 19.75", to be handled in complete darkness, carries on a polystyrene support a green-sensitized emulsion with color former for yellow, a yellow filter layer, followed by a green-sensitized emulsion with cyan, and a red-sensitized emulsion with magenta coupler. The mask is printed by contact with the original, using a Gevaert M-1 filter for arc, and M-2 filter for tungsten light. The film is color-developed and treated with Gevaert G-70 bleach-fix solution. After registration with the original, separation negatives are printed by contact or projection, using special filters and new films.

*FAIRCHILD SCAN-A-COLOR. R. Brunhouse. Ansco Abstracts, Vol. 20, No. 5, May 1960, page 255. The machine, available in 1960, produces a fully color corrected set of continuous tone separations in negative or positive form from a transparency or reflection print by a rotary scan of 200 lines per inch, or by two faster scans for lower enlargements. The reflected scanning light spot is separated into three beams passing through separation filters and striking phototubes which convert them into electrical energy fed into a computer. The computer automatically effects compression of color brightness and saturation, and correction for the color unbalance of the filters, whereas the corrections for the impurities and brightness limitations of the inks can be adjusted, as can be the printing strength of the individual printing primaries and the black printer. The electrical energy is then reconverted to light and directed onto film. Litho-Printer, August 1959, pages 8-9.

*PHOTOGRAPHIC METHOD AND APPARATUS. U. S. Patent 2,927,520 - Application June 23, 1958. D. R. Craig - Assigned to Logetronics, Inc. Official Gazette 752, No. 2, March 8, 1960, p. 352. A photographic method comprising directing a light beam having a variable color characteristic through a transparency and forming a real image thereof on a photosensitive surface having a plurality of dissimilar gamma values each of which is a function of the color of light to which it is exposed, scanning said transparency with said beam, continuously sensing the intensity of light directed from said beam through said transparency and continuously modifying the color of said beam as a function of said intensity regardless of color.

*O U I OPTICAL CONVERTER. Anon. Graphische Woche, No. 28, October 1959, pp. 871-2 (in German); Printing Abstracts, Vol. 15, No. 1, January 1960, p. 34. This new attachment for process cameras, developed by Jena Optik of Jena, has been demonstrated by Hoh & Hahne Hohlux GmbH., Offenbach/M., W. Germany. It permits (1) the widening of line elements; (2) the narrowing of line elements and (3) removal of screening. The scope of this device is briefly described.

*THE CORRECTING EFFECT (DOT-ETCHING QUALITY) OF PHOTOGRAPHIC MATERIALS. I. A. Novikov. Zhur. Nauch. i Priklad. Fotografi i Kinematografi, 4, pp. 356-62, No. 5, September-October, 1959; Monthly Abstract Bulletin, Vol. 46, No. 3, March 1960, page 133. By the correcting effect of a photographic material is meant its ability to compensate to a certain extent for loss in density of a halftone dot during dot etching. A numerical value was given to the property by measuring, with a special graticule in the eyepiece of a microscope, the diameter of an etched dot in which the grains in the core of the dot just prevented the passage of background light. This correcting factor was found to be unaffected by the conditions under which development

and dot etching were carried out, but to be markedly affected by the properties of the emulsion layer itself. The correcting effect became greater as the silver halide content of the material was increased. The correcting factor was also increased as the covering power of the emulsion and the gelatin-to-silver ratio increased. The essential condition for good etching properties is shown to be the presence of the halo surrounding the dot.

DO-IT-YOURSELF COLOR VIEWER (Specifications for PDI's New Viewing Method). Anon. National Lithographer 67, No. 5, May 1960, pp. 39, 78 (2 pages). Simple illustrations and descriptions of a viewing booth developed by Printing Developments, Inc. and based on Phillips fluorescent lamps. Facilities for viewing both reflection and transparency copy are included. Sources for the specified materials are given. 3 illustrations.

COLOR REGISTER IN PHOTOGRAPHY. Frank M. Preucil. Printing Production 90, No. 8, May 1960, p. 70 (1 page). A question is raised about masks made through one filter which do not register with separations made through another. The lens is pointed out as one unsuspected source of this trouble. A test for the lens is outlined. Filters can also be at fault. For some forms of this trouble more unsharp masks are suggested.

PLANOGRAPHIC PRINTING PROCESSES

WHAT WE HAVE LEARNED ABOUT WEB-OFFSET. Hyman Safran. Modern Lithography 28, No. 4, April 1960, pp. 39, 140, 141, 143 (4 pages). (From a talk at Navigraphic '60 Forum, New York, March 19, 1960). Report of experiences of a printer with a record of success with web offset in publication work. His latest 5 on 5 blanket-to-blanket Harris-Cottrell press is described. Problems and successes in the field are discussed, including improvements in plates, paper and ink already achieved and yet needed. Present problems include: 1. Lack of skilled craftsmen, 2. Scarcity of high speed equipment, 3. Paper and ink problems not yet solved, 4. Resistance to change.

WEB-OFFSET FOR NEWSPAPERS STUDIED AT RIT. Anon. Modern Lithography 28, No. 4, April 1960, pp. 52, 55, 141 (3 pages). A report on studies at Rochester Institute of Technology on web-offset use for newspapers. Technical and economic factors are explored in question and answer form. Since no newspaper is known using web-offset, the practicality of the process is not proven as yet.

LITHO PLATE CARE ON PRESSES. Anon. Printing Production 90, No. 7, April 1960, p. 54 (1 page). First suggestion is that a pressman should learn more about platemaking. Suggestions are given on roller setting, packing, and control of blinding and scumming.

SWING TO WEB OFFSET IS TREND IN LITHOGRAPHIC INDUSTRY. William H. Webber. The Inland and American Printer and Lithographer 145, No. 1, April 1960, pp. 62-63. (2 pages) Web offset has grown rapidly in the past few years. Some reasons are given as faster printing time, greater flexibility, savings in full color printing, and the use of roll paper. Some disadvantages, or deterrents are: resistance to change, paper waste, plate cracking, paper and ink problems. Improvements which have contributed to the growth of web offset have been the same improvements in plates, dampening systems and paper as in sheet fed work. The contributions of L.T.F. in these are cited.

WEB OFFSET ROLLS AHEAD. Hyman Safran. National Lithographer 67, No. 5, May 1960, pp. 33, 48, 51 (3 pages). Author first briefly describes experiences in getting into web offset leading at present to the installation of their fourth press a 50" 10 Color Cottrell. This press is described briefly. The growth of web offset is shown by: from one make a few years ago to six or more (publication presses) and from perhaps 10 4-Color presses in 1946 to over 100 now. Some problems in web offset include: lack of skilled craftsmen; speed, paper and ink problems; and resistance to change. 1 illustration.

CRAYONS, COLORS AND CHARACTERS. Roger Callahan. Modern Lithography 28, No. 4, April 1960, pp. 46-47 (2 pages). Reminiscences of the days of the lithographic stone, jobs running to 16 or more colors, the techniques used on the stones, and particularly of the artists applying those techniques.

FAST COLOR WEB OFFSET. Anon. Printing Magazine 84, No. 3, March 1960, p. 83 (1 page). A story on a Harris-Cottrell press built for Safran Printing Co. of Detroit. It is a double five color press printing blanket-to-blanket with a 50" web and 35" cut off (based on 8½ x 11 in. imposition). Web speed is up to 1200 f.p.m. Press is 92' in length and weighs 110 tons. Three illustrations show the press on the Cottrell assembly floor.

PRODUCT GROWTH IN THE SMALL LITHO FIELD. Richard L. Smith. Printing Production 90, No. 8, May 1960, pp. 38, 39, 91, 92 (4 pages). The smaller litho presses, or offset duplicators were originally intended for use in business establishments, the so-called "captive plants". Printers, especially smaller plants, have found them useful and profitable. The wide variety of plates available to these presses and the quickness and simplicity of their preparation, copy preparation techniques, and the presses themselves are discussed.

PAPER AND INK

FAST, SIMPLE METHODS MEASURE LABEL SCUFF. Irwin R. Sipherd. Package Engineering 5, No. 1, January 1960, pp. 48-51 (4 pages). In contrast to so many areas of package testing where no shortcuts exist, there are practical ways of evaluating the rub-resistance of labels on glass bottles. The author points out that 20 minutes in a modified Sutherland ink-rub tester is the equivalent of a transcontinental trip by rail or motor freight. His experience in label testing shows that users can win the cooperation of lithographers and label printers by convincing them of the quantitative need for improved scuff resistance. This in turn leads to the use of improved coatings and eliminates the need of protective bars on bottles (to shield labels from abrasion) or higher moisture content in labels themselves.

THE IMPACT OF THE FOOD ADDITIVES LAW ON PRINTING PLANT PRACTICE. Hal-Curtis Felsher and Walter J. Hanau. Gravure 6, No. 6, June 1960, pp. 28, 57, 58 (3 pages). The importance of this law to the printer lies in the possibility that packaging materials might migrate to contained food. A check list is given to aid the printer in complying with the law. This list gives brief specific suggestions, for instance, on acceptable solvents.

EXPERIENCE WITH CONTROL CHARTS ON INK-FILM THICKNESS AND SHARPNESS. Warren L. Rhodes and John F. Petrycki. TAPPI 43, No. 5, May 1960, pp. 429-433 (5 pages). Experience over a 12-month period with control charts on ink density and sharpness in lithographic printing is described. One of the experiments in color reproduction at the Rochester Institute of Technology calls for repeating results obtained using an offset press to print three colors on coated stock. Density and sharpness are measured with a densitometer. The pressman is asked to achieve a constant ink density and sharpness within one sheet and from sheet-to-sheet on all press runs. This paper describes how the pressman tries to achieve this uniformity and shows his results by means of control charts and related statistical tests. One batch of paper exhibited a periodic sheet-to-sheet variation. Paper tests were run on these sheets to see which of the test methods correlated with press results. Ink density correlated with basis weight, coating weight, gloss, brightness, and caliper.

PAPER PROPERTIES SHOULD FIT PRINTING PROCESS. Dr. Walter W. Roehr. Gravure 6, No. 4, April 1960, p. 36 (1 page). A brief enumeration of properties of papers for various printing processes. For offset, the coating should not be weakened by moisture; the paper should be clean to avoid tint, etc., on the blanket; and certain chemical requirements are imposed by the ink-water nature of the process. In gravure, surface smoothness, compressibility and flexibility. Letterpress requires printing smoothness and sufficient bonding strength to prevent pick, although this requirement is less than for offset.

THE NPIRI PRINTING WEDGE AS A MEASURE OF THE COMMERCIAL PRINT QUALITY OF NEWSPRINT. S. Steinberg, C. F. Geffken and W. K. Herrmann. TAPPI 43, No. 6, June 1960, pp. 539 thru 552 (14 pages). Relative print qualities of five newsprints printed under actual production conditions and in the laboratory using a modified NPIRI printing wedge were determined. Overall agreement between the two methods was good as indicated by a correlation coefficient of 0.934. Within individual panels degree of correlation depended on panel experience in judging production proofs. A Latin square experimental design involving five newsprints, five presses, and five runs was utilized in production. The composite of these runs was called a "Master Press Run." In the laboratory white samples were run at five pressures and at a continuous variable film thickness. 13 additional laboratory tests were run on the white samples. These were: Chapman smoothness (glass backing and rubber backing); ink strike-in (Kimberly-Clark); Finnish laboratories E test and H test; Bendtsen hardness; Bendtsen smoothness; rotogravure print test; Chandler and Price letterpress test; Bausch and Lomb opacity; PATRA oil test; Ingersoll glarimeter; Bekk smoothness. The E test had the best agreement with the master press run; the correlation coefficient being 0.964.

RUB-OFF OF PRINTED NEWS STOCK, Andries Voet, and Wm. N. Whitten, Jr. American Ink Maker 38, No. 3, March, 1960, pp. 34, 35, 36, 37, 77 (5 pages). The practical method described duplicates a rubbing action under standardized conditions and gives quantitative results reproducible with an error of less than 3%. The method is described and illustrated. Some of the results obtained with news inks on newsprint are given and discussed. 1 line illustration, 6 graphs and 6 tables.

THE PATRA 'PET'. Anon. The Lithographer and Offset Printer 56, No. 3, March 1960, pp. 22, 24 (2 pages). This simple instrument, a 'Paper Equilibrium Tester' gives a quick, direct and reliable indication of the sort of dimensional changes in paper that are likely to occur when the paper is taken into the pressroom for machining. It is sword shaped duralumin bar which is "plunged up to the hilt through the unbroken wrapping of a sample ream of paper". It then makes two marks on one sheet of paper a known distance apart. When the package is opened and the marked sheet conditioned, the change in distance between the marks can be detected to an accuracy of 0.025% (0.005 in.). The use of the instrument and how it compares with the sword hygrometer are discussed. The PATRA PET is being included with the PATRA TEST BENCH or may be purchased separately. 1 illustration.

SYNTHETIC INKS, A NOVELTY? Anon. I.G.T. Nieuws, Vol. 12, No. 7, July 1959, p. 100-2; No. 10, October 1959, pp. 152-3 (in Dutch); Printing Abstracts, Vol. 15, No. 1, January 1960, p. 4. I. The development of plastic-based inks in recent years is discussed. Their advantages include higher pigment concentration, better flow, less wear on plates, less smudging when printing wet-on-wet, better gloss, etc. II. The use of modified alkyd resins in printing inks is briefly discussed.

*INK FILM THICKNESS MONITOR. Anon. Litho-Print, Vol. 2, No. 11, November 1959, p. 53; Printing Abstracts, Vol. 15, No. 1, January 1960, p. 27. Two Russian engineers have developed and patented a device to control ink film thickness. This measures the light reflected from printed marks or individual areas of a sheet, and this light is

passed through a complementary filter, and the resulting impulses indicate ink film thickness, after having been amplified. Normal ink film thickness leads to a zero reading, as the output current is cancelled out at a standard ink film thickness, which is pre-set. Deviations from normal, that is too much or too little ink, are indicated on a dial and also by a lamp signal.

*NEW DEVELOPMENT IN LITHO INKS. Anon. Galleon, No. 10, October 1959, pp. 8-9; Printing Abstracts, Vol. 14, No. 12, December 1959, p. 915. Owing to the production of roller polymers having a much higher resistance to mineral oils, it is now possible to use litho inks containing sufficient aliphatic hydrocarbons to ensure a more rapid setting of the ink. An essential aspect of the formulation is that the pigment is thoroughly wetted by the vehicle and not merely ground fine. This ensures a good flowing ink without any troublesome tendency to take on too much water during the printing of an image small in area compared with the total plate size, it is claimed. Other advantages claimed for these inks are listed.

*EXPERIENCE WITH CONTROL CHARTS OF INK-FILM THICKNESS AND SHARPNESS. W. L. Rhodes, and J. F. Petrycki. Rochester Institute of Technology, Graphic Arts Research Department, Rochester 8, New York (Doa. 62.1/20, 174); Printing Abstracts, Vol. 15 No.1, January 1960, p. 8. One of the experiments in colour reproduction at Rochester Institute of Technology calls for repeating results obtained using an offset press to print three colours on coated stock. Density and sharpness are measured with a densitometer. The pressman is asked to achieve a constant ink density and sharpness within one sheet and from sheet-to-sheet on all press runs. This paper describes how the pressman tries to achieve this uniformity and shows his results by means of control charts and related statistical tests. One batch of paper exhibited a periodic sheet-to-sheet variation. Paper tests were run on these sheets to see which of the test methods correlated with press results. Ink density correlated with basis weight, coating weight, gloss, brightness and caliper.

SOME INVESTIGATIONS OF PAPERS AND INKS IN CONNECTION WITH A PRACTICAL PRINTING TEST. G. E. Carlsson. Grafiska Forskningslaboratoriet Meddelande, No. 42, June 1959, pp. 18-23 (in Swedish); Printing Abstracts, Vol. 14, No. 12, December 1959, p. 921. Several papers and inks of the same type but of different makers were tested on the same job. A remarkable difference in the possible printing speed with regard to the picking of the papers was found. The surface bonding strength of the papers was tested with the Dennison wax test and the LTF pick tester. Relatively good correlation was found between the practical results and the Dennison test but not with the pick tester. The surface strength of the papers seemed to be in reverse proportion to their ash content. The inks were tested in the Inkometer and the results correlated well with the practical results with one exception, which was of interest, as this particular ink was considered to be the best in the test runs.

THE INFLUENCE OF HUMIDITY ON THE BEHAVIOR OF PRINTING PAPER. K. A. Falter. Fogra Mitteilungen, No. 22, September 1959, pp. 2-7 (in German); Printing Abstracts, Vol. 14, No. 12, December 1959, p. 922. The causes and effects of the hygroscopic behavior of paper, the influence of moisture on the basis weight, tearing strength, breaking extension, folding endurance, bending resistance, smoothness, static electricity, dusting (fluffing), misregister, surface changes by machine stretch, bending of rollers, waxing and the drying of inks are discussed.

*PRINTABILITY PROBLEMS OF SHORT-FIBRED PAPERS, WITH SPECIAL REFERENCE TO STRAW. J. Grant. World's Paper Trade Review, Vol. 152, No. 15, 8 October 1959, pp. 944, 953-954, 947-8; Printing Abstracts, Vol. 14, No. 12, December 1959, p. 922. A comparison is made between the dimensional stability, fluffing tendencies, opacity, colour or brightness, and uniform receptivity towards printing solids on short-fibred pulps and classical softwood or coniferous wood [illegible].

FLUORESCENT INK FOR NEWSPAPERS. Anon. The American Pressman 70, No. 5, May 1960, pp. 14, 5, 6, 8,63 (5 pages). The December 18, 1959 issue of Toronto Globe & Mail carried an ad printed partly in green fluorescent ink, believed to be the first newspaper usage of such inks. A story is given on the preparations for the run and the precautions to be taken for such work. Difficulties originally encountered are now well under control.

MAGNETIC INK - MAGNETIC PRINTING. G. L. Erikson. The American Pressman 70, No. 5, May 1960, pp. 42, 3, 4, 5, 6, 7, 8, 9, 50, 1 (10 pages). Magnetic ink is now available which will print just about any form, including halftone work, by either letterpress or offset, on just about any stock using any commercial offset press or duplicator. The magnetizable characteristics of this ink are described. Reference is made to "The Common Machine Language for Mechanized Check Handling", Bank Management Publication 147, published by American Bankers Association. Most magnetic printing for the present will be on checks but there are other future possibilities. The problems involved in printing with magnetic inks are gone into quite thoroughly with the aid of numerous diagrams well supplied with dimensions showing allowable deviations from the standard and with means of checking explained and illustrated. Author enters into some brief speculations as to fields into which magnetic ink usage might expand in the future. 20 illustrations in line and halftone.

*THE INK BUILDS UP ('PEARLS'). Anon. Fadenzahler, Vol. 8, No. 3, 1959, pages 1-4 (in German); Printing Abstracts, Vol. 14, No. 5, May 1959, page 382. The causes of building up ('pearling') in letterpress and offset are discussed. The ink can build up on printing plates and blocks, which causes the filling-in of halftones and the formation of unsharp prints. Another type of 'pearling' frequently occurs when the ink is not suited to the paper surface. In this case, when perfecting, the ink builds up on the printing surface of the first printing process. Other causes of the building up of inks are dusty papers, drying of the ink on the rollers and emulsifications of water and ink in the offset process. Hints are given on avoiding these troubles.

*THE INFLUENCE OF SOME PAPERMAKING VARIABLES ON FLUFFING. E. J. Pritchard. British Paper Board Makers' Association Proceedings of the Technical Society, Vol. 39, Part 3, December 1958, pages 445-57; discussion 458-65 (E4/19,143); Printing Abstracts, Vol. 14, No. 5, May 1959, pages 390-1, 2 pages. Trial makings of paper made under strictly controlled conditions, followed by fluff estimations both on the fluff tester and by printing runs, have shown that the fluffing tendency of a paper can be decreased by: 1. Increasing the proportions of softwood pulp in the furnish. 2. Replacing the esparto by hardwood pulp. 3. Increasing the beating given to the stuff. 4. Surface-sizing the paper. All these changes (apart from 4) also increase the dimensional instability and decrease the opacity of the paper. Thus, surface-sizing (in this work, with starch or gelatine)appears the best method of decreasing fluffing without increasing other undesirable characteristics of the paper. No significant difference was found amongst various agents used for surface-sizing.

PAPER TROUBLES CHART FOR PRESSMEN. Anon. Modern Lithography 28, No. 4, April 1960, pp. 40-41. Prepared by the Lithographic Division, New York Employing Printers Association. Twenty-one forms of paper troubles which can occur in lithographic printing are covered under the following four headings: (1) Trouble, (2) Term, (3) Cause, (4) Possible Cure.

HINTS ON USE OF MAGNETIC INKS. Maurice Adler. Share Your Knowledge Review XLI, No. 7, April 1960, p. 13 (1 page). Magnetic inks are for use in printing special code numbers on bank checks for convenience in sorting. Some hints: uniformity of press-work throughout entire run is necessary; impressions should be as light as possible; the use of fountain agitators is recommended; avoid over-wetting in lithography; no

additives should be used (with two exceptions listed); stripping and opaquing should be thorough to avoid pinholes; and registration, cutting, trimming and perforating must be to close tolerances.

LITHOGRAPHY - GENERAL

*U. S. Patent 2,941,466 - Application August 24, 1956. Douglas A. Newman and Allan T. Schlotzhauer - Assigned to Columbia Ribbon & Carbon Manufacturing Company, Inc. Official Gazette 755, No. 3, June 21, 1960, p. 702. A planographic printing plate comprising a fibrous flexible foundation web; a printing surface coating on said web consisting of an insoluble hydrophilic polysaccharide carboxy ether film forming material insolubilized by reaction with a metal compound selected from the group consisting of copper salts, iron salts, aluminum salts and chromium compounds and which thus reacted has a hydrophilic-oleophilic balance suitable for direct-imaging use, and which is subject to becoming excessively ink-sensitive upon subsequent exposure to protracted conditions of abnormal heat and humidity, said coating including an amount of zinc oxide sufficient to act as an aging sensitization inhibitor for said insolubilized film former, said amount being equivalent to at least about thirty percent of the weight of said film forming material.

OFFSET OPERATIONS - SELECT THE RIGHT PLATE. Earl Roberts. New England Printer and Lithographer 23, No. 4, May 1960, pp. 19-20 (2 pages). Fourteen different types of lithographic plates are listed. Variations in treatments for many of these plates multiply the choices. Some of these variables are analyzed briefly in terms of plate-making equipment needs.

THERE'S A BIG NEED FOR IMPROVED OFFSET PRESS DESIGN. Noble B. Vining. New England Printer & Lithographer 23, No. 1, February 1960, pp. 53-54 (2 pages). Author gives an extensive discussion of cylinder packing and slippage, pointing out that major press manufacturers differ in their viewpoints on this subject. He feels that the answer lies in: 1. Presses with all three cylinder bearers in contact and provision to be made for packing the impression cylinder to the desired height; or 2 presses operating without bearers but with provision for adjusting cylinder distances as well as packings.

FAST WORK ON SHORT RUNS. L. Schulz. Photo Methods for Industry 3, No. 6, June 1960, pp. 48, 78 (2 pages). Allis-Chalmers of Milwaukee in their photo department turn out many offset duplicator plates of engineering drawings and data. By systematizing their methods a 66% time saving was effected. System uses alignment method of filling camera, copy board with multiple originals, each photographed onto a separate paper negative aligned in camera back. Gang exposure of plastic duplicating plates is done in a vacuum printing frame. 6 illustrations.

CHOOSING AN OFFSET PLATE. Mel Mark. Industrial Photography 9, No. 5, May 1960, pp. 77-8 (2 pages). Brief discussion and listing of plates such as would be used in an in-plant printing or duplicating department.

INVESTIGATIONS OF TINTING AND SCUMMING IN OFFSET PRINTING ON COATED PAPERS. A. Arnamo. Grafiska Forskningslaboratoriets Meddelande, No. 42, June 1959, pp. 48-59 (in Swedish); Printing Abstracts, Vol. 14, No. 12, December 1959, P. 920. In order to investigate the cause of scumming or tinting which sometimes occurs in multicolor offset printing on machine-coated papers containing casein, a series of experiments have been carried out on a Multilith press with the dampening and inking systems divided in the middle. It was clearly shown that the only ingredient of the paper which caused this defect was casein, and that scumming and not tinting occurred. Scumming or tinting did not occur when various surface active agents were added to the fountain solution but instead an anti-scumming effect was observed in most cases. CMC had a substantially better anti-scumming effect than gum arabic.

*A NEW FABRIC FOR COVERING THE WET ROLLERS OF OFFSET PRINTING MACHINES. A. G. Gorshkova. Sbornik Nauchnykh Rabot (USSR). Vol. 7, 1956, pp. 120-31 (in Russian); Tech. Translations, Vol. 2, No. 4, 21 August 1959, p. 268; Printing Abstracts, Vol. 14, No. 12, December 1959, p. 926. A dense 2-layer fabric of twisted yarn with not less than 240 threads to the woof and of uniform thickness has been developed for use in the printing industry. Experimental specimens which were subjected to impregnation with specially precipitated stearic and silicic acids met requirements for high moisture absorption, capillarity, and endurance for 15 to 20 machine shifts during printing with zinc patterns and 24 to 26 shifts during printing with bimetallic printing patterns.

*PRINTING PLATE COATINGS. Belgian Patent 551, 598 - October 13, 1955. P. Kowaliski and H. Sallard - Assigned to Kodak. Ansco Abstracts, Vol. 20, No. 1 January 1960, page 55. Basically the coatings consist of a hydrophilic colloid with an inert filler, e.g. a 5 per cent gelatin solution of pH 7-8.5 containing 40 per cent of barium sulfate, .2-3 per cent of manganese hydroxide and a macromolecular plasticizer such as carboxy methyl cellulose or sodium alginate to which 4-5 per cent of 4 per cent formaldehyde has been added as hardening agent to improve the adhesion to the support and avoid the sinking of type into the coating. Evaporation of the formaldehyde is retarded by the addition of 50-120 ml of glycerin or 20-100 ml of diethylene-glycol per liter. The lipophilic character of the coating is improved and the number of possible copies raised from 1000 to 5000 by the incorporation of 20-100 g of ferrous sulfate per liter, preferably after coating in an amount of 40 g of dry matter per m^2. The coatings are dried at 35-45C.

*TRANSLUCENT LITHOGRAPHIC SHEETS. Belgian Patent 554,810 - February 18, 1956. J. H. P. Vareine - Assigned to Kodak. Ansco Abstracts, Vol. 20, No. 1, January 1960, p. 56. A transparent or translucent support, resembling tracing paper, is given a coating of the type of Belgian Patent 551,598 (Abstract 154/60). The opacity of the product does not exceed 70 per cent.

THE PRESSMAN'S RESPONSIBILITY TO HIS PLATE. Anon. Modern Lithography 28, No. 4, April 1960, p. 45. After a suggestion that every pressman should have some platemaking experience, plate troubles on the press are covered under the headings of mechanical damage, blind image, and scumming. Thirteen steps for curing the latter troubles are given.

OFFSET REGISTER REQUIRES GOOD WORKMEN AND EQUIPMENT. Charles W. Latham. Inland & American Printer & Lithographer 145, No. 1, April 1960, pp. 72, 3, 4 (3 pages). Misregister can occur in many steps in the offset process. Art work and plates should carry register marks. Sheet handling through the press and its relationship to register are discussed step-by-step with causes of misregister pointed out. The difference between slurs and doubles is pointed out and illustrated. Packing enters the picture as well. Suggestions are given. 3 illustrations.

SOME DUTIES OF THE PRESSMAN TO HIS PLATE. Anon. National Lithographer 67, No. 4, April 1960, p. 85 (1 page). (From Lithographic Division Bulletin, N. Y. Employing Printers Association). Author suggests apprentice pressmen should spend some time platemaking to understand plate problems better. Plate failure on the press is described briefly. A 13 step procedure is given for remaking albumen and deep-etch plates right on the press if trouble is caught soon enough.

WEB OFFSET PERFECTING PRESS PACKING. Anon. Printing Production 90, No. 8, May 1960, p. 70 (1 page). Specific suggestions on packing heights of blankets and plates above bearers are given on this rather critical cylinder packing problem.

*DIAZONIUM SALT-POLYACRYLATE COATINGS. British Patent 824,148 - 12/28/56-11/25/59. Kalle and Company. Ansco Abstracts, Vol. 20, No. 1, January 1960, page 56. Diazonium salts derived from p-aminodiphenylamine or 3-amino-carbazole are mixed with 50-100% of a water-soluble polymer or copolymer of acrylic and/or methacrylic acid for printing plate coatings. Ethylene glycol monomethyl ether is the solvent used in most of the examples. No after treatment is necessary following the development by rinsing or swabbing with water.

*PROCESSING OF AZIDE-SENSITIZED PRINTING PLATES. British Patent 824,317 - June 5, 1956 - November 25, 1959. A. M. Vincent - Assigned to Kodak. Ansco Abstracts, Vol. 20, No. 1, January 1960, Page 57. In British 743,278 (abstract 1330/56) plates coated with casein and sensitized with an azide such as 4,4-diazidostilbene-2,2'-disulfonic acid were made more ink-receptive by polyvalent metal salts. The present patent wipes the developed plate with a silicic acid soly a sodium solicate solution acidified to pH 1-2, which may contain carboxymethyl cellulose (Cellofas B). A silicate of a polyvalent metal can be used in addition to improve hardness and ink-receptivity. The preferred developer solution contains 20 g trisodium phosphate, 5 g iodine and 10 g potassium iodide per liter.

*PLANOGRAPHIC PRINTING PLATE PROVIDED WITH A MENTHYLOLATED POLYACRYLAMIDE COATING AND PROCESS OF MAKING. U. S. Patent 2,930,317 - Application December 19, 1956. Glenn Harold Perkins - Assigned to Oxford Paper Company. Official Gazette 752, No. 5, March 29, 1960, p. 1166. The method of making a planographic printing plate which comprises applying a planographic printing surface to a base by coating said base with an aqueous coating composition comprising a water soluble methylolated derivative of a water soluble polyacrylamide, said polyacrylamide being methylolated to between about 35 and 85 percent, a catalyst selected from the group consisting of zinc acetate, zinc chromate, zinc chloride, zinc borate, ammonium chloride, ammonium phosphate, and ammonium dichromate, and an inert inorganic pigment, and reacting the methylolated polyacrylamide with itself in the presence of the catalyst and pigment to form an insoluble planographic coating on said base surface.

*METHOD FOR THE PRODUCTION OF A METALLIC PRINTING MEMBER. U. S. Patent 2,924,534 - Application July 5, 1955. John E. Morse. Official Gazette 751, No. 2, February 9, 1960, p. 444. In the production of a metallic printing member presenting a zinc surface that is water receptive in certain areas and is coated in other areas of predetermined outline with a metal coating layer having greater affinity for printing ink than said zinc surface, the steps comprising covering the zinc surface presented by said printing member with a masking coating containing openings therein defining exposed areas of said zinc surface having said predetermined outline and depositing on said exposed areas of said zinc surface an adherent metal layer by chemical deposition from a substantially water-free solution in contact therewith which contains dissolved in a substantially anhydrous liquid organic solvent therefore a copper salt selected from the group consisting of copper chloride and copper nitrate and at least one other salt selected from the group consisting of the chlorides and nitrates of nickel, chromium, cobalt and titanium, said solution containing from about 0.15% to about 18% by weight of copper salt content as aforesaid and from about 0.1% to about 12% by weight of the aforesaid salt content other than said copper salt, and the weight ratio of said copper salt content to the content of aforesaid salt other than copper salt being in the range from 5:1 to 1:3.

*METHOD OF MAKING AN OFFSET BLANKET. U. S. Patent 2,925,355 - Application April 13, 1954. Edward D. Hill. Official Gazette 751, No. 3, February 16, 1960. p. 683. A method of directly preparing an off-set blanket having a desired quality of tack and a uniform thickness without requiring any subsequent shaping step, comprising mixing at a temperature below about 250°F. about 100 parts by weight of a polyvinyl resin selected from the class consisting of polyvinyl chloride, copolymer

with vinyl acetate, and copolymer of vinyl chloride of vinyl chloride with vinylidene chloride and 50 to 500 parts by weight of a low polymer liquid butadiene-acrylo -nitrile, heating the mixture from about 295°F. to 400°F. to convert it into a homogeneous mass, forming the mass in a blanket form, maintaining a face of the blanket free from defacement-contact, the properties of the mixture causing uniform thickness to result coextensively with the blanket area, and continuing the heating step to convert the mixture to a final set.

*REPELLENT SYSTEM FOR LITHOGRAPHIC DUPLICATORS. U. S. Patent 2,929,316 - Application April 26, 1956. Wallace R. Fowlie - Assigned to A. B. Dick Co., Inc. Official Gazette 752, No. 4, March 22, 1960, p. 874. In a lithographic printing machine having a master cylinder for holding a lithographic printing plate, the combination comprising a first roller arranged to convey liquid repellent to the master cylinder for application to the printing plate, a fountain for holding a supply of the repellent, a fountain roller rotatable in said fountain and adapted to be partly immersed in the repellent therein, a rotatable transfer roller engaging said fountain roller carriage means rotatably supporting said transfer roller and mounted for swinging movement about an axis coinciding with the axis of said fountain roller, said transfer roller thereby being swingable into and out of engagement with said first roller for applying repellent thereto, a rotatable cam, means for driving said cam at a rotary speed differing from the speed of the master cylinder and not a multiple or sub-multiple thereof, a follower lever having a rider thereon engageable with said cam thereby being effective to rock said lever, said lever having a portion engageable with said carriage means for swinging the same, adjustable supporting means for said lever and including a shaft having a pivot portion swingable supporting said lever and a mounting portion which is eccentric with respect to said pivot portion, and means for adjustably rotating said shaft about the axis of said mounting portion for shifting the axis of said lever so as to vary the time of engagement between said transfer roller and said first roller during each cycle of said cam, the eccentricity of said pivot portion being sufficient to vary said time of engagement from zero to continuous engagement.

*THE SURFACE REACTION IN OFFSET PLATES. Anon. Verb. graph. Betr. in Hessen, Mitt. Bl.9-10/1959, pp. 65-6 (in German); Printing Abstracts, Vol. 15, No. 1, January 1960, p. 44. Investigations into the ink acceptance and water repellency or the ink repellency and water acceptance of offset plates have been carried out by Fogra. A salt solution and an aqueous colloidal solution were used for treating the surfaces. Details are given of the investigations and the conclusions drawn from them.

*WORKING WITH ANTI-SET-OFF POWDERS. G. Kaufmann. Form und Technik, Vol. 10, No. 10, October 1959, pp. 457-9 (in German); Printing Abstracts, Vol. 15, No. 1, January 1960, p. 40. Experience has shown that these powders should be used sparingly. The K4/15 anti-set-off powder is suitable for printing on flatbed letterpress machines, while the K4/30 powder is said to eliminate setoff on turner bars on rotary and offset machines. Notes on the control and maintenance of sprayers are included.

LOOKING FOR LITHO PLANT HAZARDS. Walter R. Smith. Printing Production 90, No. 4, January 1960, pp. 37-50 (2 pages). Safety in the platemaking department and in the pressroom are discussed separately. In the former, irritants and sensitizers can lead to dermatitis. Materials causing this are described and five specific safety instructions quoted. Specific suggestions for pressroom safety largely involve avoidance of getting hands too close to moving parts. Other points cover the use of acids and solvents in the pressroom, the safe handling of heavy material and good housekeeping.

CENSUS REVEALS LITHO GROWTH. Anon. National Lithographer 67, No. 8, August 1960, pp. 43, 4, 70 (3 pages). Figures from the 1958 and previous censuses of manufacturers show the growth of lithography both in dollar volume and in proportion of total printing volume. Printing receipts in 1958 were $25 per person, more than one third of which was for lithography. Figures are given on distribution by areas in the U. S. 2 charts.

CAUSES AND PREVENTION OF DERMATITIS IN THE OFFSET PROCESS. Harlan M. Levin, M.D., Matthew J. Brunner, M.D., and Herbert Rattner, M.D. The American Pressman 70, No. 2, February 1960, pp. 28, 29, 30 (3 pages). Dermatitis is an important occupational hazard for those engaged in the offset printing process, affecting from 5 to 10% of the 30,000 workers in the industry. The prevention of dermatitis among offset cameramen, strippers, platemakers, and pressmen is difficult to achieve. No simple or complete solution of the problem is likely because of factors inherent in the offset printing procedure. Results are given of a dermatological study of industrial workers. Dichromate was found to be the most important agent in dermatitis. Perhaps the best solution to the problem of dermatitis in the offset printing process is the transfer to some other job category of workers showing evidence of skin disease related to their occupation.

LATEST DEVELOPMENTS IN THE LITHOGRAPH PRESSROOM (From a talk presented during the 40th Annual International Convention, September 1959, in New York). Jack E. Spencer. Share Your Knowledge Review XLI, No. 7, April 1960, pp. 10, 11, 12 (3 pages). Offset press developments have been gradual to keep pace with demands. Plates, chemicals, papers, rollers, inks have all improved. Press improvements mentioned are better register, better sheet control, continuous feeding and double deliveries, feeders that sheet off a roll, improved dampening systems (Mullen and Dahlgren systems described), and sheet cleaners. Newer web offset presses are described briefly.

GRAPHIC ARTS - GENERAL

INTAGLIO HALFTONE : SCREEN POSITIVES. H. M. Cartwright. Process 67, No. 794, March 1960, pp. 85-86 (2 pages). A discussion of the type of shadow dot required in the positives as governed by the necessity for a surface for the doctor blade to ride on. Earlier work with grain screens and stiff inks is compared to rotary printing with liquid ink and a doctor blade. It is pointed out that the restricted density range of halftone positives results in little use of the method in monochrome, more in color where it has its advantages. Several methods of arriving at a properly screened positive are discussed briefly. 3 illustrations, 3 references.

AN EVALUATION OF ROTARY RELIEF PRINTING WITH WRAP-AROUND PLATES. Anon. The American Pressman 70, No. 4, April 1960, pp. 25-26 (2 pages). This evaluation takes the form of a theoretical discussion of the possibilities of wrap-around plates rather than any survey of actual usage. Some points discussed include the advantages of placing one plate on the press rather than many single page plates, the anticipated elimination of underlaying and overlaying, and the advantages of phototypesetting and photocomposing.

*SHEET DELIVERY MEANS FOR ROTARY PRINTING PRESS. U. S. Patent 2,940,387 - Application August 21, 1958. Howard A. Pritchard - Assigned to Harris-Intertype Corp. Official Gazette 755, No. 2, June 14, 1960, p. 384-385. In a sheet fed printing press, in combination, an impression cylinder having sheet grippers, a gap, and an impression surface adapted to handle a maximum length sheet to be printed by said press, a printing cylinder cooperating with the impression cylinder, an endless chain conveyor having a plurality of gripper assemblies carried thereby and adapted to receive sheets from the impression cylinder, a delivery pile support to which sheets are delivered by the conveyor from the impression cylinder, and a delivery cylinder with which the impression cylinder cooperates having sprockets around which the endless conveyor and its gripper assemblies travel, said delivery cylinder being of twice the diameter of the impression cylinder and the distance along the sheet path between the point at which the endless conveyor leaves the delivery cylinder and the line of

print between the impression and printing cylinders being greater than the length of the maximum size sheet to be handled by the press, whereby the tail of a sheet will have passed the line of print before the gripper assembly holding its leading edge has left the delivery cylinder.

THE WRAP-AROUND LETTERPRESS PLATE - HOW IT IS MADE AND HOW IT IS USED. Charles A. Powers. New England Printer and Lithographer 23, No. 4, May 1960, pp. 61 (1 page) Based on a talk at the combined meeting of the New England Photoengravers Assn. and the Connecticut Photoengravers Assn., March 1960. Author describes briefly what the plate and a Harris Press for it, are like. Out of some experience in making plates for such a press he notes that the negative required is between that for litho and for photoengraving and gives a few working details of the preparation of the plate. Since his volume of such business is not yet large no special equipment is used. High cost is still a problem.

HOW TO COPE WITH FIRE. Jack Stroube. Gravure 6, No. 3, March 1960, pp. 24, 5, 6, 90, 1, 2, 4 (7 pages). Based on a paper given at the recent annual meeting of the Printing and Publishing Section, National Safety Council. The cost of a fire can easily be greatest in the side effects of loss of production. Causes of fires are listed, careless smoking is the worst. Housekeeping factors and other causes are discussed. An insert gives new data on sparking and non-sparking metals as used in tools. "Your first defense against fire, and your last hope in the event of one, is a well trained man, backed up by a well-prepared plan". A training schedule is discussed.

BAUER IN ENGLAND. Anon. The British Printer 73, No. 6, June 1960, pp. 87 thru 93 (7 pages). Some history on the partnership of Fredrick Koenig and Andreas Friedrich Bauer in the early 19th Century. The result was the first mechanization of printing including the first cylinder press. Some of these early presses are shown in the 8 illustrations included.

GRI PROGRESS REPORT: WEB TENSION CONTROL AND PROGRESS. Harvey F. George. Gravure 6, No. 4, April 1960, pp. 30, 1, 2, 3, 60, 2 (6 pages). A progress report on the various research projects of Gravure Research, Inc., given at the 1960 Convention of the Gravure Technical Association. Some of the projects covered include: Web tension research, paper runability and press downtime (involving web breaks), an impression gage, color correction research, evaluation of color scanners, and direct electronic engraving of gravure plates. 6 graphs or other illustrations.

PHOTOTYPESETTING - BIG BOON TO BUSINESS FORM FIELD. Kurt Franck. New England Printer & Lithographer 23, No. 5, June 1960, pp. 53 (1 page). Description of how a business forms printer uses photocomposition by the Fotosetter in his work. Method is to rule or inscribe on a negative. A step-by-step description tells the whole procedure.

LETTERPRESS IS HERE TO STAY. Joseph Chanko. The American Pressman 70, No. 4, April 1960, pp. 10, 12, 14, 15, 16, 20 (6 pages). (From a talk before the 9th Annual Conference of the Research and Engineering Council of the Graphic Arts Industry). Authors' theme is that all three major printing processes "are here to stay", including letterpress. The advantages of letterpress are given as follows: 1. It has a wide range of use, 2. availability, 3. flexibility, 4. quality, 5. economy, 6. magazine and long run commercial work, 7. general. Past progress is covered under 22 points covering, among other points, inks, rollers, papers, photoengraving, electrotyping, press improvement. The future is discussed in terms of certain needs, mostly under the headings of "better and less expensive". Research for the industry is mentioned at the end.

MARKS FOR LINEUP AND REGISTER. Anon. The American Pressman 70, No. 4, April 1960, pp. 44-45 (2 pages). It is pointed out that a certain amount of confusion exists in marks indicating the amount a plate is to be moved for line-up and register purposes. Suggestions are offered for standardization based on leads (.028in), points (.014in) and thousandths of an inch. Six line diagrams.

RUBBER PLATES FOR LITHO PRESS. Anon. Boxboard Containers 78, No. 805, January 1960, pp. 33-4 (2 pages). A lithographer found that he could not lay enough fluorescent ink for a background printing using normal offset lithographic techniques. Instead he: 1. Removed blanket and mounted rubber relief plates on that cylinder, either direct on the cylinder, or later, on a carrier plate clamped in the blanket clamps. Sticky back was used. 2. A blank plate placed on the plate cylinder converted that cylinder into an oversized inking cylinder. 3. The water fountain was disconnected. This arrangement gave adequate coverage in one printing, adequate plate life for 500,000 runs and easy reconversion of the press for lithographic printing.

HOW ONE CONSTRUCTS THE WORLD GRAPHICALLY. Loic Cahierre. La France Graphique 160, April 1960, pp. 4 - 22 (19 pages); (in French). 15 illustrations from ancient maps to modern aerial surveys, ground control and cartographic methods.

PRINTING SALES UP 30% IN FOUR YEARS. Glenn C. Compton. Printing Magazine 84, No. 4, April 1960, pp. 85, 106 (2 pages). Figures given are preliminary reports of the 1958 U. S. Census of Manufacturers. Printing and publishing gained 21.6% (1954-1958, value added by manufacture) compared to 21.3% for all manufacturing industries. Other figures for the period: Commercial printing gained 25.8%, lithography gained 44.4% to reach $1,442,727,000 in dollar volume. In 1958 Printing and Publishing was third in number of establishments, eighth in value added by manufacture and ninth in number of employees. Other figures are given. An additional fact which is very interesting was given in an editorial on page 67 of the same issue "In 1958, when 2800 offset presses were sold, 90.4% of them went into plants that had letterpress equipment".

PRINTING INK PROGRESS - 2. E. A. Apps. Paint Manufacture, Vol. 29, No. 11, November 1959, pp. 368-70; Printing Abstracts, Vol. 15, No. 1, January 1960, p. 20. The properties, cleaning, and advantages and disadvantages of polyurethane rollers and the difficulties involved in the manufacture of p.v.c. rollers are discussed. Brief reference is made to polythene, nylon distributor, cast rubber and nitrile synthetic rollers and paper covers for dampening rollers.

*POLY-U ROLLERS. Anon. Print in Britain, Vol. 7, No. 6, October 1959, p. 179; Printing Abstracts, Vol. 15, No. 1, January 1960, p. 20. Stability in size, and hardness at all reasonable operating temperatures and conditions of humidity, are among the advantages claimed for Avon Poly-U composition rollers.

*A WEB VIEWER FOR HIGH-SPEED PRINTING PRESSES. Anon. Paper Packs, October 1959, pp. 34-5; Printing Abstracts, Vol. 15, No. 1, January 1960, p. 28. The Barr and Stroud Web Viewer, Type 2.K.1, presents a section of the web reflected in a mirror system. This mirror system moves during web travel so that the image of the web appears stationary. Details of the operation and installation of this web viewer on rotary machines are given.

FARRINGTON OPTICAL SCANNER READS TYPEWRITTEN COPY AND PUNCHES COMMON LANGUAGE TAPE. Anon. The American Pressman 70, No. 5, May 1960, pp. 38-39 (2 pages). This is a mechanical reading machine or "character recognition device" capable of reading typewritten copy, caps and lower case, punctuation and numbers at 240 characters per minute and translating this into punched tape form. The machine involves three basic components: scanner, computer, and tape puncher. The function of each and how they work is explained. Five illustrations and a table.

*SHEET FEED. Schnellpressenfabrik AG Heidelberg. British Patent 817,664 - appln April 11, 1957, Germany 7 December 1956, published 6 August 1959 (Cb) (H.M. Patent Office, London); Printing Abstracts, Vol. 15, No. 1, January 1960, p. 29. A sheet feeder, e.g., for cylinder printing presses, has swinging grippers and lay guides which perform two independent movements, one being a pendular movement carried out in two distinct phases, substantially in the line of the feed direction, and the other being an oscillatory movement in a plane approximately at right angles thereto.

*TENSION CONTROL FOR WEB PRINTING MACHINES. Fred A. Schmidt. U. S. Patent 2,892,597 - Application April 4, 1957. Official Gazette June 2, 1959, p. 1121. In a web tension control for printing machines, tension belts for engaging and driving a web roll, variable speed means for driving said belts and control means for said variable speed means, the said control means comprising a follow-up tachometer producing a signal component proportional to the belt speed, a master tachometer producing a signal component proportional to the running web speed, tension responsive means producing a signal component proportional to the tension in the running web, means for combining the three said signal components to produce an error signal which is a substantially linear function of the three said component signals, and means for varying the speed of the said variable speed means proportionally to the said error signal.

SELECTING DRIVES FOR YOUR NEW OFFSET PRESSES. G. H. Brandt. Printing Production 90, No. 4, January 1960, pp. 48-49 (2 pages). The drive system on an offset press is the key to its production and performance. The author reviews the features of the two most popular systems used at this time. The first, or Wound Rotor A.C. Drive motor is simple, rugged, requires little servicing and is the least expensive initial investment where A.C. power is available. The second system or variable voltage D.C. drive, while not new, is gaining in recent years, and is almost without exception standard equipment on five and six color lithographic presses. This variable voltage D.C. drive system gives a greater speed range and infinitely variable speed increments, with more efficient operative and use of power. The servicing requirements of these units are generally less than for the Wound Rotor A.C. Drive systems, especially if they are of modern design. The small press owner must decide between low first cost of the first system as against the various long run savings possible with the second one.

MUSICWRITER USED TO TYPE MUSICAL SYMBOLS. Anon. Inland & American Printer & Lithographer 145, No. 1, April 1960, p. 86 (1 page). Description of a new kind of typewriter which types musical symbols (all except slurs). Copy can be prepared for photographing for printing plates, or for various forms of duplicating. 1 illustration.

LATEST DEVELOPMENTS IN THE COMPOSING ROOM. Alexander Lawson. Share Your Knowledge Review, Vol. XLI, No. 6, March 1960, pp. 14-17 (4 pages). By limiting himself to a quick survey of developments of last fourteen years, he points out that he is limited to typesetting machines and mostly phototypesetting. The position of phototypesetting is given as "here to stay" and "will inevitably increase". Phototypesetting equipment described includes: Fotosetter, Monophoto, ATF-Hadego, Photon, ATF Typesetter, Alphatype, and Linofilm. Each is described briefly, its present status given, and some comment made on capabilities. In new hot metal machines, the Monomatic and the RCA Electro-Typesetter are discussed.

HOW TO DETERMINE IF PHOTOCOMPOSITION AND OTHER NEW PROCESSES BELONG IN YOUR PLANT. Collier Elliott and Paul Doebler. Printing Production 90, No. 7, April 1960, pp. 35, 36, 37, 91, 92, 93 (6 pages). The problem of decision on whether or not to use a new process, such as photocomposition, is one of determining comparative costs. Methods for evaluating costs exist in the form of methods engineering. The hot vs. cold

composition comparison is complicated by the auxiliary operations they affect. The individual problem of each plant must be determined by: 1. Productivity of operations. 2. Mixture of advertising styles. 3. Size of work load. 4. Cost of materials. Methods for analysis are presented. Some conclusions covering the four points are given based on a study of 30 newspaper operations. One table of comparisons.

BANK CHECK PRINTING A THRIVING SPECIALTY. H. F. Reves. Printing Magazine 84, No. 7, July 1960, pp. 46, 7, 9 (3 pages). A story on an Atlanta, Ga. printer who had moved from general printing to bank check and similar specialty work. In a move into the present plant in 1956, plant planning and layout were built around the specialty. Both offset and letterpress are used. The equipment and operations are described in some detail. Magnetic ink check printing is the newest phase of the work. 5 illustrations.

MORE LIGHT ON WORK. Dr. W. Schweisheimer. Printing Magazine 84, No. 7, July 1960, p. 104 (1 page). The Illuminating Engineering Society has recently developed a new basis for required foot-candle lighting levels for industry and business. New levels recommended for the printing plants are:

[illegible] inspection and appraisal	200
Machine composition	100
Composing room	100
Presses	70
Imposing stones	150
Proof reading	150

Some reasons back of these recommendations and some characteristics of lighting equipment are discussed.

PRINTING QUALITY AUDITS ARE EASY - A Definition of Statistical Quality Control and A Few Suggestions on How Printing Craftsmen Can Use It. Donald Macaulay. The American Pressman 70, No. 3, March 1960, pp. 34, 5, 6, 7, 8 (5 pages). Statistical Quality Control is described briefly as a Scientific Technique for determining and controlling sources of production errors. The process is broken down into four steps: 1. Descriptive Statistics; 2. Probability; 3. Statistical Inference; 4. Quality or process controls. Each is illustrated and explained and the control chart method of quality control illustrated and explained as applied to printing. 6 illustrations and charts.

PROOFREADING FOR OFFSET HAS SPECIAL PROBLEMS. Burton Lasky. Inland & American Printer & Lithographer 145, No. 1, April 1960, p. 77 (1 page). Differences occur even when copy is set by Linotype or other hot metal method as the camera picks up type imperfections that can be eliminated on the press in letterpress printing. Handling corrections on the one original coming from typewriter composition means correction marks should be on an overlay sheet. Many other tips are given applying specifically to the type of material supplied for offset reproduction. 1 illustration.

OUR EXPERIENCES WITH WRAP-AROUND PRINTING. Robert H. Downie. Printing Production 90, No. 8, May 1960, pp. 31, 2, 65, 6 (4 pages). The thin, flexible plate idea is not new; it had to await certain developments; i.e. Dow fast etch method, inking system improvements, photocomposing, and otherwise preparing for and handling large plates, also the pressure on letter press to change helped. [illegible]periences [illegible]rathon in pioneering in the use of wrap-around plates are given. 5 illustrations.

QUESTIONS TO ASK YOURSELF BEFORE ACQUIRING EQUIPMENT. Ernest W. Fair. Printing Production 90, No. 8, May 1960, pp. 68-9 (2 pages). An error in buying printing equipment means the buyer is stuck with his error for a long time. A list of questions summarizes suggestions from a number of experts on the proper approach. Examples: "Can we afford the unit?"; "Will it handle every possible task in the future?"; How Reliable is the Unit?"; etc. to a total of 15 such questions to each of which a one paragraph discussion is added.

A PROGRESS REPORT ON LETTERPRESS ENGRAVINGS. Dr. Marvin C. Rogers. The American Pressman 70, No. 5, May 1960, pp. 8, 10, 12, 13 (4 pages). A review of recent progress starting by noting that the letterpress research situation has improved noticeably in the past year. Author finds encouragement in the interest in graphic arts shown by such companies as RCA, duPont, 3M, Fairchild, Hell and others. Progress noted includes color film, dimensionally stable base graphic arts films, LogEtronics, ROP Color, Scanners, Plastic Plates, wrap-around letterpress plates and the presses for them, and powderless etching of zinc, magnesium and copper.